Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (Original) An image processing device to multiply a two-dimensional pixel data by a matrix of coefficients and filter said pixel data based on a sum of the multiplied results, said image processing device comprising:

a memory unit array in which a plurality of memory units in a form of matrix are arranged which at least includes a first memory cell, a second memory cell and a third memory cell to store said pixel data;

a first calculator arranged in rows of, and in the number of columns of, said memory unit array to perform computation of the pixel data of a specified column in the memory unit array and obtain a first processing data to store in said second memory cell; and

a second calculator arranged in columns of, and in the number of rows of, the memory unit array to perform computation of the first processing data of a specified row of the memory unit array and obtain a second processing data to store in said third memory cell; and

wherein said filtering is performed based on a computed result by the second calculator.

2. (Original) The image processing device according to claim 1, wherein said first processing data is stored in a memory unit located in a middle row among said memory units in the specified column, and said second processing data is stored in a memory unit in a middle column among said memory units in the specified row.

3. (Original) An image processing method, in an image processing device which comprises:

a memory unit array in which a plurality of memory units to store pixel data are arranged in the form of matrix;

a first calculator arranged in rows of, and in the number of columns of, the memory unit array; and

a second calculator arranged in columns of, and in the number of rows of, the memory unit array; said image processing method comprising:

a first step to obtain a first processing data by performing computation of pixel data in a specified column of the memory unit array to obtain a first processing data, and store the first processing data in a second memory cell which is independent from a first memory cell which stores the pixel data in the memory units; and

a second step to obtain a second processing data by performing computation of said first processing data in a specified row in the memory unit array, and store the second processing data in a third memory cell in the memory units.

4. (Original) The image processing method according to claim 3, wherein said first processing data is stored in the memory unit in the middle row among said memory units in the specified column, and said second processing data is stored in the memory unit in the middle column among said memory units in the specified row.

5. (Original) The image processing method according to claim 3, wherein computation in said first step is performed by shifting along rows, and subsequently, computation in said second step is performed by shifting along columns.

6. (Original) The image processing method according to claim 4, wherein computation in the first step is performed by shifting along rows, and subsequently, computation in the second step is performed by shifting along columns.

7. (Original) The image processing method according to claim 3, wherein computation in the second step is performed by shifting along columns, and subsequently, computation in the first step is performed by shifting along rows.

8. (Original) The image processing method according to claim 4, wherein computation in the second step is performed by shifting along columns, and subsequently, computation in the fist step is performed by shifting along rows.